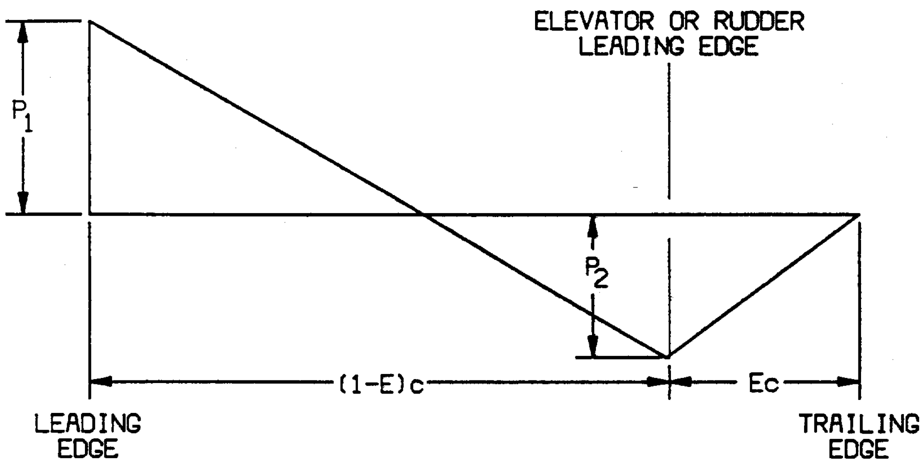
FIGURE A7—CHORDWISE LOAD DISTRIBUTION FOR STABILIZER AND ELEVATOR OR FIN AND RUDDER



$$P_1 = 2\,(\overline{w})\,\frac{(2 - E - 3d')}{(1 - E)}$$

$$P_2 = 2\,(\overline{w})\,(3d' + E - 1)$$

where:

$\bar{w}$=average surface loading (as specified in figure A.5)

E=ratio of elevator (or rudder) chord to total stabilizer and elevator (or fin and rudder) chord.

d′=ratio of distance of center of pressure of a unit spanwise length of combined stabilizer and elevator (or fin and rudder) measured from stabilizer (or fin) leading edge to the local chord. Sign convention is positive when center of pressure is behind leading edge.

c=local chord.

NOTE: Positive values of $\bar{w}$, P_1 and P_2 are all measured in the same direction.

[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964, as amended by Amdt. 23–7, 34 FR 13097, Aug. 13, 1969; 34 FR 14727, Sept. 24, 1969; Amdt. 23–16, 40 FR 2577, Jan. 14, 1975; Amdt. 23–28, 47 FR 13315, Mar. 29, 1982; Amdt. 23–48, 61 FR 5149, Feb. 9, 1996]

APPENDIX B TO PART 23 [RESERVED]

APPENDIX C TO PART 23—BASIC LANDING CONDITIONS

[C23.1 *Basic landing conditions*]

Condition	Tail wheel type		Nose wheel type		
	Level landing	Tail-down landing	Level landing with inclined reactions	Level landing with nose wheel just clear of ground	Tail-down landing
Reference section	23.479(a)(1)	23.481(a)(1)	23.479(a)(2)(i)	23.479(a)(2)(ii)	23.481(a)(2) and (b).
Vertical component at c. g	*nW*	*nW*	*nW*	*nW*	*nW*.
Fore and aft component at c. g	*KnW*	0	*KnW*	*KnW*	0.
Lateral component in either direction at c. g.	0	0	0	0	0.
Shock absorber extension (hydraulic shock absorber).	Note (2)	Note (2)	Note (2)	Note (2)	Note (2).
Shock absorber deflection (rubber or spring shock absorber), percent.	100	100	100	100	100.
Tire deflection	Static	Static	Static	Static	Static.
Main wheel loads (both wheels) (*Vr*)	(*n-L*)*W*	(*n-L*)*W* b/d	(*n-L*)*W* a′/d′	(*n-L*)*W*	(*n-L*)*W*.
Main wheel loads (both wheels) (*Dr*)	*KnW*	0	*KnW* a′/d′	*KnW*	0.

[C23.1 *Basic landing conditions*]

Condition	Tail wheel type		Nose wheel type		
	Level landing	Tail-down landing	Level landing with inclined reactions	Level landing with nose wheel just clear of ground	Tail-down landing
Tail (nose) wheel loads (*Vf*)	0	(*n-L*)*W* a/d	(*n-L*)*W* b′/d′	0	0.
Tail (nose) wheel loads (*Df*)	0	0	*KnW* b′/d′	0	0.
Notes	(1), (3), and (4).	(4)	(1)	(1), (3), and (4)	(3) and (4).

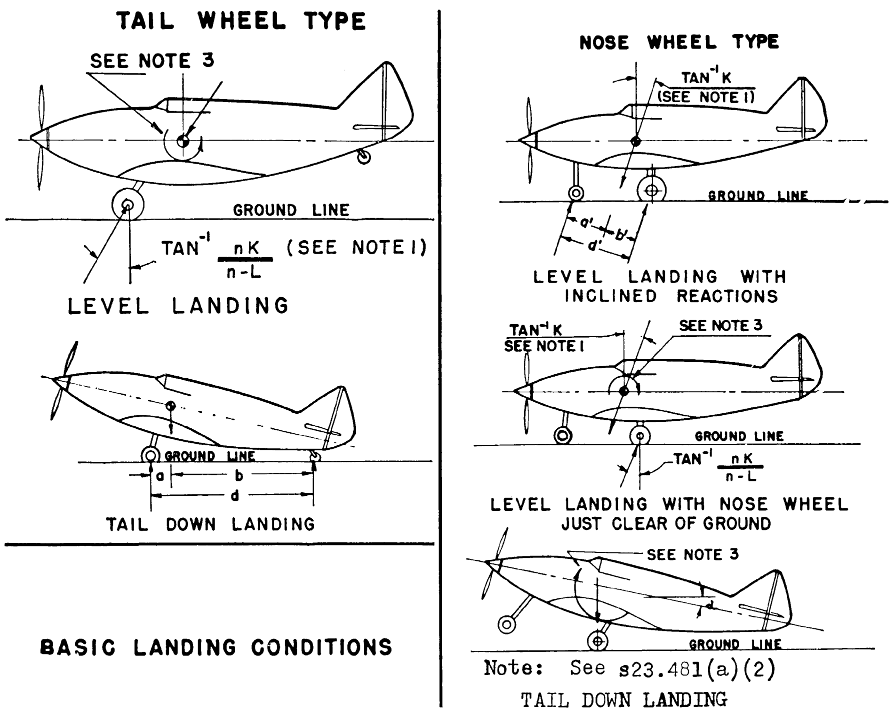
NOTE (1). *K* may be determined as follows: *K*=0.25 for *W*=3,000 pounds or less; *K*=0.33 for *W*=6,000 pounds or greater, with linear variation of *K* between these weights.

NOTE (2). For the purpose of design, the maximum load factor is assumed to occur throughout the shock absorber stroke from 25 percent deflection to 100 percent deflection unless otherwise shown and the load factor must be used with whatever shock absorber extension is most critical for each element of the landing gear.

NOTE (3). Unbalanced moments must be balanced by a rational or conservative method.

NOTE (4). *L* is defined in § 23.725(b).

NOTE (5). *n* is the limit inertia load factor, at the c.g. of the airplane, selected under § 23.473 (d), (f), and (g).



[Doc. No. 4080, 29 FR 17955, Dec. 18, 1964, as amended by Amdt. 23–7, 34 FR 13099, Aug. 13, 1969]

APPENDIX D TO PART 23—WHEEL SPIN-UP AND SPRING-BACK LOADS

D23.1 *Wheel spin-up loads.*

(a) The following method for determining wheel spin-up loads for landing conditions is based on NACA T.N. 863. However, the drag component used for design may not be less than the drag load prescribed in § 23.479(b).

$F_{Hmax}=1/r_e \sqrt{2I_w(V_H—V_c)nF_{Vmax}/t_S}$

where—

F_{Hmax}=maximum rearward horizontal force acting on the wheel (in pounds);

r_e=effective rolling radius of wheel under impact based on recommended operating tire pressure (which may be assumed to be equal to the rolling radius under a static load of n_jW_e) in feet;